ABSTRACT OF THE INVENTION

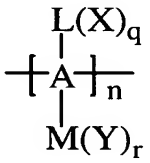
The invention provides a device for selective molecular recognition, the device comprising a sensing portion, wherein said sensing portion includes a substrate having coated thereon a layer comprising a hyperbranched compound having:

(1) a polymer backbone portion that is at least partly randomly branched;

(2) at least one pendant group extending from the polymer backbone portion; and

(3) at least one halogen substituted alcohol or phenol group substituted at the pendant group(s) of the polymer backbone portion.

The compound of the invention preferably has the general formula:



wherein A is the hyperbranched backbone portion of the polymer;

L and M are independently selected pendant groups of said polymer backbone;

X and Y are independently selected halogen substituted alcohol or phenol groups;

q and r are independently selected and at least 1; and.

n is at least 3.

The device is used to detect the molecules of a hydrogen bond accepting vapor such as organophosphorus or nitroaromatic species.